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Modeling of MLL-AF9-rearranged pediatric leukemia

Carretta, Marco

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Stellingen behorende bij het proefschrift:

Modeling of MLL-AF9-rearranged pediatric leukemia

1. Yin and Yang, the ancient Chinese philosophical concept, vividly portrays the intricate and dynamic interactions between leukemic stem cell and the bone marrow niche. (*Cancer Biology & Medicine, 2016*)
2. Successful xenotransplantation depends on three major factors: tolerance by the mouse host, correct spatial location, and appropriately cross-reactive support and interaction factors such as cytokines and major histocompatibility complex molecules. Each of these can be modified. (*Haematologica, 2016*)
3. In the human bone marrow scaffold xenograft model the myeloid and lymphoid features of MLL-AF9 and BCR-ABL+ leukemias can be studied in detail, both using lenti/retroviral model systems as well as patient samples. (*This thesis*)
4. The humanized scaffold xenograft model allows for relatively simple genetic engineering of the bone marrow microenvironment and it will be very useful to functionally study the importance of niche factors for normal and malignant human hematopoiesis. (*This thesis*)
5. Lineage fate of MLL-AF9 leukemic stem cells is dictated primarily by microenvironmental cues and cell of origin rather than an instructive role of the fusion partner gene. (*This thesis and Cancer cell, 2008*)
6. Although MLL-AF9 drives an aberrant gene expression program regulating for instance the HOXA cluster, it still critically relies on the activity of non-mutated transcription factors or tyrosine kinases. (*This thesis*)
7. BRD3/4 does not directly control MLL-AF9 chromatin recruitment but independently controls additional pathways critically important for the survival of MLL-AF9 cells. (*This thesis*)
8. We have to remember that what we observe is not nature in itself, but nature exposed to our method of questioning. (*Werner Heisenberg*)
9. Anyone who wishes to grow over their lifetime needs criticism (*Donald J. Cram*)
10. Spes Sibi Quisque (*Virgil*) (*Loosely translated as "Each person must find hope in him or herself"*)

Marco Carretta